



2005 Remediation Division Annual Report

It is the mission of the Montana Department of Environmental Quality to protect, sustain and improve a clean and healthful environment to benefit present and future generations.

It is the mission of the Remediation Division to protect human health and the environment by preventing exposure to contaminants released to soil or water, and to oversee compliance with state and federal laws and regulations.

Remediation Division 2005 Employee Performance Award

Karen Frisbie is a dedicated state employee who takes her work seriously and does it well continuously. Her work is meticulous, thorough and accurate. Karen knows state requirements, regulations and department policies. She demonstrates her belief that a state employee should provide taxpayers a full measure of work. Karen is prompt and a responsible manager of her time. She is exceptional in retrieving requested data. She understands the Access program in depth and adeptly maneuvers through data entry and retrieval. She makes quarterly visits to the Billings field office and smoothly transfers filed information to the Access data base while also restoring order to hard-copy files and other clerical needs. Karen is a patient, much-appreciated mentor to all newcomers to the division. She embodies optimism, objectivity and professionalism. She's a caring person with a great sense of humor. The Petroleum Release Section is as good as it is because of Karen. She is at the focal point of data handling and maintenance for the section. Karen works below the radar, but in a vital role in the success of the Department of Environmental Quality on behalf of all of Montana.

Nominees for the Remediation Division 2005 Employee Performance Award

Vic Andersen is a 30-year state employee who has worked to clean up land and water contaminated by mining.

Kelly Schmitt, Site Response Section, is Brownfields coordinator and oversees five CECRA sites.

Moriah Bucy, Site Response Section, helped obtain funds to study the Kalispell Pole & Timber site.

Scott Gestring, Petroleum Release Section, oversees 150 sites and Risk-Based Corrective Action guidance.

Nominees for 2005 Governor's Award for Excellence in Performance

Silver Bow Creek Remediation Team: Joel Chavez, Shellie Haaland, Tim Reilly, Mary Talley, Brad Smith

The Silver Bow Creek Cleanup Team directed the removal of mining wastes from the creek floodplain and reestablished a clean, naturally flowing stream over eight miles between Butte and Anaconda. The team and its contractors are transforming this contaminated landscape into an attractive area for public recreation in a complex project demanding innovation. The largest cleanup of its type in the nation, it is a model for government and private-sector partnership.

National Association of Environmental Professionals (NAEP) awards

Joel Chavez and Silver Bow Creek remediation, restoration project

Joel Chavez, project officer and section manager in the DEQ's Remediation Division, received the National Association of Environmental Professionals' (NAEP) recognition for continuing work to clean up and restore Butte's contaminated Silver Bow Creek.

Green Apple International Award

Silver Bow Creek remediation, restoration

Joel Chavez, manager of the Construction Services Section of the Mine Waste Cleanup Bureau, received the British-based Green Organization's International Green Apple Environment Award for ongoing cleanup and restoration of Silver Bow Creek at Butte.

EPA Region 8 Environmental Achievement Award

Catherine LeCours

Catherine LeCours, Remediation Division federal Superfund project manager, received the U.S. Environmental Protection Agency's Region 8 2005 Environmental Achievement Award. LeCours developed a cleanup plan for the Lockwood Solvent Groundwater Plume NPL Site adjacent to Billings. LeCours directed a field investigation, feasibility study and final decision on cleanup procedures needed on the 580-acre site.

Hazardous Waste Site Cleanup Bureau

Site Response Section

The Site Response Section utilizes the Comprehensive Environmental Cleanup and Responsibility Act (CECRA) and the Environmental Quality Protection Fund (EQPF) to investigate and cleanup hazardous substances at sites not addressed by federal Superfund. Historical waste disposal activities at these sites caused contamination of air, surface water, groundwater, sediments, and/or soils with hazardous or deleterious substances. Under CECRA, sites are ranked based on potential risks to human health and the environment. Because staff and financial resources are not sufficient to address the 210 listed sites in Montana, CECRA activities focus primarily on maximum and high priority sites. The program has consent decrees or administrative orders at 12 CECRA sites, but current resources only allow SRS to address 11 sites and ensure compliance. Shortfalls in the Resource Indemnification Trust income have resulted in shortfalls in the amount of funding the EQPF receives, preventing the program from being fully staffed. There are currently 56 maximum and high priority sites on the CECRA Priority List; however, 24 of those sites are not being actively addressed by the program or another agency. Low and medium priority sites and sites not on the CECRA Priority List are often addressed through the Voluntary Cleanup and Redevelopment Act (VCRA).

In addition to routine reviews and approvals conducted by SRS, here are other 2005 highlights:

- Approved in May the preliminary remedial action objectives and preliminary remediation goals document for Big West Oil which sets cleanup numbers; worked with the PLPs on a schedule for the feasibility study (FS) work plan and screening of alternatives.
- Approved a treatability study work plan at BN Missoula and conducted oversight while that work plan was implemented. The work plan will help determine applicable technologies for the facility. At the same time, SRS provided another round of comments on the risk assessment work plan. Also identified gaps in the data that must be filled in order to make risk assessment decisions and have provided an analysis of those gaps to BNSF, along with a requirement for them to submit a sampling and analysis plan (SAP) to fill the data gaps so the site can continue to move forward with the CECRA process.
- At KPT/Reliance/Yale, SRS distributed an information sheet to residents, businesses, local government officials, and legislators in August. Progress continues on the data summary report and remedial investigation work plan (RIWP). Once the RI is completed, DEQ will have the information necessary to evaluate alternatives and make a final cleanup determination. Cleanup of these sites is a huge step in protecting human health and the environment.
- Hired a consultant to prepare a SAP for a Phase III Environmental Site Assessment to determine the extent of the source material that must still be present and leaching to the groundwater at the Davis Post Yard. Once this information is known, DEQ can determine how best to handle the facility and can plan for clean up, if funding is available.
- Oversaw a soil gas investigation in North Havre, adjacent to the BN Fueling Facility, to evaluate whether volatile organic compounds, specifically vinyl chloride and benzene, in the groundwater had the potential to cause vapor intrusion problems in the residences. The investigation showed that concentrations were below screening levels and vapor intrusion is not an issue.

- Delisted Vaughn Gravel Pit from the CECRA Priority List.
- Issued a Proper and Expeditious Letter on Joslyn Street Tailings for BNSF to determine the full extent of contamination associated with the facility.
- Completed review, public comment and approved the voluntary cleanup plan under the Voluntary Cleanup and Redevelopment Act (VCRA) for Brewery Flats Lewistown Facility. Completed the Brewery Flats cleanup including removal of surface soil lead contamination and subsurface soil petroleum contamination.
- Completed removal of the waste pile at the Mike Horse Mine in the Upper Blackfoot Mining Complex that was started in 2004. The Mike Horse tailings impoundment dam-stability investigation was completed. The US Forest Service engineering evaluation/cost analysis (EE/CA) for the impoundment is pending. Performed annual monitoring required under the Water Quality Temporary Standards.
- Reviewed or approved numerous work plans (soil gas and vapor intrusion, pilot testing) to address data gaps identified in DEQ's scope of work (December 2004) at Texaco Sunburst Works Refinery. Field work is slated to begin in early 2006.
- Completed the cinder pile portion of BN Livingston ROD, and sampled indoor air from structures near the rail yard.
- Assisted owners of Pyramid Lumber to investigate the nature and extent of wood-treating contamination at their facility prior to potential listing on the CECRA Priority List.
- Collected outstanding past costs on Lockwood Solvent Site.
- Intervened in the Miles City Railyard litigation to ensure the facility is investigated and cleaned up.

2005 Groundwater Remediation Program Accomplishments

- Identified and sent Water Quality Act (WQA) notice letters at 10 new sites.
- Closed one site.
- Completed groundwater investigation and source assessment of the Lost Creek Fan nitrate problem north of Kalispell. Assisted with a successful field trip of the Lost Creek Fan area. The field trip was intended to introduce Whitefish High School students to groundwater issues in the Flathead area. Submitted a grant application for additional funding to further investigate the Lost Creek Fan nitrate problem.
- Completed a Phase II assessment of the Berg Lumber Mill property in Lewistown. The assessment was funded with Brownfields monies. Additional assessment activities including groundwater sampling and soil sampling will likely be conducted.
- Laura Alvey was appointed to the Certified Crop Advisory Board to represent DEQ interests. The CCA program provides training and certification of crop advisers who, in turn, provide free services to crop producers.

Petroleum Release Section

The Petroleum Release Section contains the Leaking Underground Storage Tank (LUST) Trust Fund Program and the Petroleum Tank Release Cleanup Fund (PTRCF) Program. Technical staff implement corrective action required of the Montana Underground Storage Tank Act. They oversee, require, and sometimes perform the investigation and cleanup of sites contaminated by releases of regulated substances from underground storage tanks. The universe of owners and operators consists of federal, state and local governments, schools, hospitals, railroads, service stations, utilities, convenience stores, farms, and other industrial and commercial enterprises. A total of 4,266 releases have been confirmed since the inception of the program in 1988 through December 31, 2005.

If the tank owner was in compliance with the UST program laws and rules when the release was discovered, the Petroleum Tank Release Compensation Board (PTRCB) is authorized to reimburse a portion of the eligible leak investigation, remediation and third-party damage costs. The first \$35,000 in costs is split with the tank owner.

In general, the program has not needed to take strong enforcement measures to achieve compliance with the corrective action requirements, due to the availability of the PTRCF and the rules for access to the fund. State law requires UST sites to remain in compliance with cleanup requirements in order to remain eligible for funding from the PTRCF. In the event that an UST owner/operator cannot afford cleanup or, refuses to conduct cleanup, the program may take unilateral state investigation and remediation action utilizing LUST Trust funds. These actions are funded 90% by a federal grant, which is matched by 10% in state monies. Costs incurred by the department for these actions are recoverable from solvent responsible parties.

The LUST Trust Program initiated contracted services totaling \$206,923 enabled the department to remove 4 abandoned underground storage tanks at multiple sites, some with prolonged enforcement histories. In addition \$4,217 was expended for cleanup work at 3 sites where enforcement actions are being taken against recalcitrant owners. Investigations of contamination traced the sources of 3 releases and resulted in the identification of 2 parties who will be responsible for cleanup.

Routine Petroleum Release Section work efforts in 2005 included addressing 62 new petroleum releases, approving 375 work plans (165 remedial investigations, 120 cleanups, 90 monitoring) and closing 36 releases. Other 2005 highlights include:

- Completed new PRS Technical Guidance and Informational Documents on Prioritization of Petroleum Releases, Permeations of Waterlines by Petroleum Constituents, Spill Prevention, Control, and Countermeasure Plans, and Groundwater Sampling Methodologies, and posted them on the PRS webpage.
- Provided articles for its publication, “MUST News,” on numerous topics including the use of Electrical Resistance Heating, and Release Notification Procedures.
- Approved numerous work plans involving innovative cleanup technologies including ISOC technology, chemical oxidation technology, and dual-phase extraction and bio-stimulation technology. One technology new to Montana, involving the use of ozone to oxidize contaminated sediments, was evaluated for use at several sites.
- Jeff Kuhn, PRS Manager, gave a number of technical presentations:
 - A paper entitled “Electrical Resistance Heating Technology Coupled with Air Sparging and Soil Vapor Extraction for Remediation of MTBE and BTEX in Soils and Groundwater in Ronan, Montana” at the 21st Annual UST/LUST Conference in Seattle, WA.
 - He moderated a very successful session at the meeting entitled “Small Releases Add Up to Big Problems” that focused on the environmental impacts caused by low volume petroleum releases that are not typically reported at UST facilities.
 - Jeff also organized and moderated two international training sessions on MTBE and Fuel Oxygenates in Copenhagen, Denmark, and Leipzig, Germany. The training sessions provided an opportunity for regulators and environmental consultants in each country to learn more about the difficulties of investigating and remediating MTBE and other Fuel Oxygenates.
- Successfully implemented LUST Trust actions at Silva’s Conoco in Ekalaka and Avon General Mercantile in Avon. Ten USTs were removed at the Silva’s site. One UST was removed from the Avon sites – a site with a protracted enforcement history.
- Completed a large contaminated soil removal action (approx. 8,000 cubic yards) at the Harlem Equity Coop site to protect a portion of the municipal water line in Harlem, Montana. Funds for this project were provided in a DNRC Resource Development Grant authorized during the 2005 legislative session.
- The LUST Trust Program in association with the U of M Geology department, utilizing a grant from the American Petroleum Institute completed a contaminant research project at George’s Conoco in Ronan using cone penetrometer and membrane interface probe (CPT/MIP) technology to characterize subsurface soil and groundwater contamination. The CPT/MIP characterization project demonstrated the importance of detailed stratigraphic assessment of a large site with a widespread contaminant plume.

The assessment also demonstrated the utility of rapid turnaround in the data collection process to allow immediate decision making in the field.

- Referred two actions to DEQ Enforcement Division for formal enforcement this year and provided support to legal staff for six enforcement cases and six cost recovery actions, including a major cost recovery action at Lakeside which is ongoing.

Brownfields

The Remediation Division's brownfields program is supported in both the Petroleum Release and Site Response sections. PRS received federal brownfield funding for the first time in 2005 which was the third year for SRS to receive brownfield funding. Both sections have brownfield coordinators who maintain information about brownfields in Montana and assist communities in redevelopment of blighted properties. Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land and both improves and protects the environment.

In 2005, the division's brownfield program received \$637,110 in grant funding to establish and enhance its state response programs. The Site Response Section received \$486,893 and the Petroleum Release Section received \$150,237. The brownfields coordinators for these programs work closely together to provide outreach and technical guidance to communities that are actively working toward revitalization of brownfields.

The Remediation Division's Brownfields program:

- conducted fourteen public outreach meetings and presented Brownfields opportunities to communities in Montana;
- continued working on four targeted Brownfields assessments: Brewery Flats, Lewistown; Old Holy Rosary Hospital, Miles City; David Post Yard, Willow Creek; and Berg Lumber Mill, Lewistown;
- identified potential petroleum brownfield sites;
- initiated development of a brownfields database;
- Petroleum Release Section received FFY2005 Brownfields grant for program start-up funding and support for up to five targeted brownfields assessments;
- published the first issue of a semi-annual newsletter, The Outreach;
- presented a poster on Montana's state, tribal, and local brownfield activities at the national brownfields conference;
- reviewed 25 competitive grant applications for brownfields assessment, clean up, and revolving loan funds;
- assisted the Hazardous Waste Section of the Permitting and Compliance Division in development of a brownfields program to address abandoned methamphetamine laboratories.

Mine Waste Cleanup Bureau

Abandoned Mined Land Section

Montana's Abandoned Mined Land Reclamation (AML) Program within the Department of Environmental Quality (DEQ) is responsible for cleanup and reclamation of historic (pre-1977) mining-related disturbances. In effect since 1980, Montana's AML Program is regulated by federal and state statutes statute, and by Montana's Approved Abandoned Mine Reclamation State Plan published at 30 CFR Part 926.

The money for abandoned mine reclamation is made available through congressional appropriation. Each year Montana receives approximately \$3.2 million in federal grants to fund cleanup and closure at mine sites

where there is no continuing reclamation responsibility under federal or state laws. Since 1982 the AML Program has spent \$103 million reclaiming abandoned mines in Montana with approximately 90 percent going to private-sector engineering, consulting and construction firms. While areas disturbed by coal mining have the highest priority under Montana's program, abandoned mine funds are used to reclaim hard-rock and open-cut mining disturbances as well.

Fee collection which supports abandoned mine reclamation activities expired September 30, 2004. Attempts to extend fee collection failed to pass in the past two Congresses. The AML Program has been kept alive by a series of short-term extensions, the most recent of which is slated to expire June 30, 2006. The future of Montana's AML Program depends on the ability to get a bill through Congress that will continue fee collections and provide for annual grants for Montana into the future. Thus, AML has continued to follow reauthorization legislation closely.

Program highlights in 2005 include:

- Received the following grants from USDOJ - Office of Surface Mining:
 - \$533,641.00 Administrative Grant
 - \$2,854,357.23 Reclamation Construction Grant
 - \$125,000 Emergency Reclamation Grant
 - \$36,000 Coal Outcrop Fire Grant
- \$1.5 Million RIT-RGD Grants approved by Legislature:
 - Goldsil Reclamation Project (Silver Creek) \$300,000
 - Washington Mine Reclamation Project \$300,000
 - Bluebird Mine Reclamation Project \$300,000
 - Frohner Mine Reclamation Project \$300,000
 - Buckeye Mine Reclamation Project \$300,000
- Completed reclamation at the Musselshell County 2005 Reclamation Project including work at the Jefferies #1 Coal Mine, Republic #4 Coal Mine, Brillhart Ranch Mine Fire and Musselshell Ranch Mine Fire.
- Completed coal fire abatement activities at the Red Bluff #1 and Red Bluff #2 Coal Seam Fires in Yellowstone County.
- Completed reclamation at the Wickes Smelter Reclamation Project in Jefferson County.
- Completed reclamation construction and revegetation work at the Coal Creek Mine in Rosebud County as a cooperative project with the Energy and Industrial Minerals Bureau (coal mining regulatory program).
- EPA adopted the Engineering Evaluation and Cost Analysis previously developed by AMS for the Great Republic Smelter at Cooke City, Park County. Adoption of this document by EPA allowed for funding of the cleanup at the Great Republic Smelter through EPA's Superfund Removal Program without the need of additional investigation or engineering work.
- Initiated reclamation construction at the LP-1 Basin Creek, Ontario and Argentine Mine Sites Reclamation Project in Lewis and Clark, Jefferson and Powell Counties.
- Initiated reclamation repository and site access construction at the Washington and Belle Lode Reclamation Project in Jefferson County.
- Performed maintenance work at Nick Locken and Royan Coal Mine Reclamation projects to control continued mine subsidence.
- Initiated investigations or continued work at the following abandoned mine reclamation projects:
 - Belt Coal Mine Acid Mine Drainage Control Project, Cascade County
 - North Fork Coal Company Mine Fire, Flathead County

- Elkhorn Queen, Bluebird Mine, Frohner Mine, Big Chief-Golconda Mine, all in Jefferson County
- Bald Butte Mine, Silver Creek Drainage, and Spring Meadow Lake Park Site, all in Lewis and Clark County. The AMLS is coordinating cleanup actions at Spring Meadow Lake Park with the Montana Department of Fish, Wildlife and Parks.
- Snowshoe Mine, Lincoln County
- Buckeye Mine, Madison County
- McLaren Tailings and Millsite in Park County

Construction Services Section

The Construction Services Section of the Mine Waste Cleanup Bureau is responsible for implementing the cleanup of 21.6 miles of Silver Bow Creek from Butte to the Warm Springs Ponds. The \$100 million project is paid for by Atlantic Richfield Corp. as part of a federal Superfund settlement with Montana, the United States and the Confederated Salish and Kootenai tribes. The state is the lead agency implementing the remedy which includes removal of heavy metal contaminants and reconstruction of both the stream channel and floodplain.

Federal Superfund Section

The Federal Superfund Section of the Mine Waste Cleanup Bureau is responsible for administering remedial cleanup activities, in consultation with EPA, at federal Superfund sites in Montana. Two federal Superfund sites, the Montana Pole NPL site and the Troy Operable Unit of the Libby Asbestos NPL Site are DEQ lead sites resulting in DEQ being responsible for initiating and conducting remedial activities.

Anaconda Smelter

- **Community soils:** residential yard removals and railbed Remedial Design/Remedial Action (RD/RA);
- **Old works:** RD/RA for commercial / industrial properties;
- **Regional water waste and soils:** promoted development of the Anaconda Deer Lodge County's ability to participate in the development and implementation of institutional controls. Major issues involved Community of Opportunity ground water quality concerns, Opportunity Ponds RD/RA, Mill Creek surface water ARAR waivers for arsenic, Mount Haggin Wildlife Management Area RD/RA, and initiation of Consent Decree planning;
- **Barker/Hughesville Mining District:** limited investigative work progressed and observed US Forest Service remedial activities;
- **Basin Mining Area:** EPA completed Town OU RD/RA in early 2005, Watershed OU in limited RI/FS phase;
- **BN Somers:** reviewed ground water treatment and O&M;
- **Carpenter/Snow Creek Mining District:** limited investigative work in remote drainages, EPA conducted removal action in town of Neihart;
- **East Helena Asarco:** held discussions with EPA concerning the draft proposed plan and related remedy issues;
- **Idaho Pole:** reviewed ground water treatment and O&M, held brief discussions with EPA concerning draft explanation of significance differences;
- **Libby Asbestos:** continued removal actions, remedial investigation sampling took place with ROD expected in 2006, and DEQ planned the Troy Asbestos Preliminary Evaluation work in 2006;
- **Libby Groundwater:** reviewed ground water treatment and O&M;
- **Lockwood Solvent Ground Water Plume:** issued the Record of Decision in cooperation with the EPA. The selected remedy specified remediation of solvents in the soils and ground water at Lockwood through a combination of a ground water treatment barrier, enhanced bioremediation, soil-vapor

extraction, excavation and thermal treatment of shallow soil, and chemical oxidation application to deeper soil. After issuance of the ROD, EPA reassumed lead management of the Lockwood project and planned enforcement negotiations with the PRPs.

- **Milltown Reservoir NPL Site**
 - **Clark Fork River OU:** began cash out settlement discussions with EPA, state and federal trustees, and Atlantic Richfield. If successful cash out settlement reached, DEQ, in consultation with EPA and the state NRD program will concurrently conduct remedy and restoration.
 - **Milltown Reservoir Sediments OU:** reached a consent decree between the government agencies and the settling defendants specifying removal of the Milltown Dam and contaminated sediments;
- **Montana Pole:** continued remediation with treatment of contaminated groundwater and soil. DEQ offloaded approximately 28,000 cubic yards of land farm treatment (LTU) soils and backfilled onsite. DEQ also communicated closely with BSB Health Department officials during the offload to reduce odors to the adjacent Boulevard neighborhood. DEQ continued to coordinate with MDT concerning the replacement of the interstate highway bridges.
- **Mouat:** reviewed EPA's proposed NPL delisting, planned ground water and stabilized block study.

- **Silver Bow Creek/Butte Area NPL Site**
 - **Priority Soils-** conducted discussions with EPA and state trustees concerning the anticipated record of decision and technical impracticability determinations for ground water;
 - **Mine Flooding:** continued testing O&M for water treatment plant until remedial action required;
 - **Rocker:** O&M for ground water; and
 - **Warm Springs Ponds:** O&M.
- **Upper Tenmile Creek Mining Area:** EPA continued RD/RA for watershed waste removal, and town of Rimini water and wastewater systems continued at the Tenmile.

Fiscal and Administrative Services

<i>In FY 2005, the Remediation Division managed a total of \$25,378,603 while expenditures totaled \$18,853,658.</i>
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FAS completed a challenging year processing tons of work orders for follow-up activities to improve the functionality of the LCG building. In addition, staff successfully adjusted to work-load modifications resulting from reorganizations in the fall of 2004 and from some prolonged vacancies. Further, FAS made inroads with daunting task of records management, purging duplicative and non-agency records from storage. Approximately 750 boxes remain stored offsite that are included in this management process.

Cost Recovery

EQPF: \$743,409.19 collected in FY 2005

LUST: \$130,726.86 collected in FY2004

Records Management

A records management team was developed to start creating a remediation records management plan. The team has analyzed the way that remediation division is currently storing records and is in the process of making improvements to the current system in conjunction with the Department's overall records management plan.

Work concluded with Information Technology Services to develop an Access database to electronically track the content of boxes sent to archives. The database is currently being updated which will eventually allow staff to see contents of each box on their desktop instead of relying on paper indexes that have been incomplete.

Information Technology Support Services

Remediation Division IT Support consists of two Office of Information Technology personnel physically located at the LCG building. These two personnel are responsible for Remediation Division database and website administration; IT project planning and coordination; and hardware/software purchasing coordination and assistance.

Major 2005 accomplishments include:

- Continued migration of all Remediation Division databases to the Facility Identification Template for States (FITS) data model developed by the EPA.
- Development of the Remediation Division Online Query System in conjunction with NRIS to allow internal and external database queries via the website.
- Implemented new Division-wide website style sheet that altered the “look and feel” of the website to match the new State standard.
- Continued support of the Remediation Division Digital Atlas and Online Query System website information services in conjunction with NRIS.
- Continued data cleanup and normalization efforts related to name, address, and location information.
- Upgraded reporting functionality of PetroFund database.
- Developed Lyris web server page to display all DEQ list serve lists and allow users to subscribe/unsubscribe via the website.
- Hired Wendall Smith to replace John Dayton.